



THE  
ONTARIO WATER RESOURCES  
COMMISSION  
  
WATER POLLUTION SURVEY  
  
of the  
  
VILLAGE OF SOUTH RIVER  
  
DISTRICT OF PARRY SOUND

1967

TD  
380  
.S68  
1967  
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Report on a water pollution  
survey of the village of South  
River, district of Parry Sound.

80698

Report

on a

Water Pollution Survey

of the

VILLAGE OF SOUTH RIVER

District of Parry Sound

November 1967

District Engineers Branch  
Division of Sanitary Engineering

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# R E P O R T

## ONTARIO WATER RESOURCES COMMISSION

### I INTRODUCTION

The purpose of this survey was to locate and record significant sources of water pollution within the Village of South River.

Water pollution surveys are performed routinely and upon request, and are primarily designed to locate and record sources of existing and potential water pollution. Where these sources are noted, recommendations concerning their abatement are made to the parties concerned.

The appendices to this report include a tabulation of the results and a map of the village showing the approximate surface-water sampling point locations.

### II GENERAL

The Village of South River is situated approximately 175 miles north of Toronto on Highway 11. The village has been built to the southeast of the crossing of the South River by Highway 11. The 1967 Municipal Director lists the population as 958.

### III WATER SUPPLY

#### (1) Water Supply

Water for the village is supplied by the municipal water works. The water from springs is gathered by 13 collection wells and is directed to the wet-well beneath the pumphouse where chlorine

is added for disinfection purposes. At present, the village has Commission approval to supplement this well supply, on a temporary basis, with water from the South River.

(2) Recreational

Recreational use of the South River includes swimming, fishing and boating.

(3) South River Electric Company

This private company utilizes a natural fall of the South River to generate power. From the dam at the top of the fall the water is directed to two generators via a 48-inch-diameter wooden pipe. Power from this station is sold to the Hydro Electric Power Commission of Ontario.

IV WATER POLLUTION

(1) Sanitary Waste Disposal

The disposal of sewage is effected on a private basis, the main method being septic tanks and sub-surface tile beds. Privies are used at some premises. In general the lots are very level and sand or sand and gravel exists to a reasonable depth in the overburden. This area will provide optimum conditions for a properly designed septic tank installation.

In order to facilitate the provision of adequate sewage facilities to serve future development the village has initiated proceedings for a Provincial Sewage Works Programme.

(2) Refuse Disposal

Refuse from the village is disposed of at a refuse disposal area, located at Lot 9, Concession 3, Township of Machar. This land is owned by the village. At present it is not a potential source of water pollution.

(3) Storm Sewers

Due to the relatively flat area of most of the town, storm sewers have been constructed to conduct the water from these flat areas toward natural drainage courses. The locations of these outfalls are shown on the appended map.

(4) Industrial Waste Disposal

Industry in the village is minimal. There are no known pollution problems at present with the Edward C. White & Company saw mill and the D.A. Clark Veneers factory. The Division of Industrial Wastes of the Ontario Water Resources Commission is working with Beaver Charcoal to prevent the discharge of an objectionable effluent.

V DISCUSSION OF WATER QUALITY

Samples were collected from the South River and drainage and storm sewer conduits were investigated. Samples were taken, where possible, from the outfalls to the river. The sampling point locations are shown on the enclosed map and the results of the laboratory analyses are recorded in the appended tables.



The laboratory results indicated that South River is within the Ontario Water Resources Commission's water-quality objectives. There was no evidence of any contaminating waste being discharged to the storm sewers or drainage ditches.

Comparative samples were collected at similar locations and another investigation was done on September 28, 1967. There was no appreciable difference from the first inspection results.

## VI SUMMARY

A water pollution survey of the Village of South River was carried out by the Ontario Water Resources Commission. Field investigations were made during the months of July and September 1967. From samples taken and observations made it was concluded that there are no significant sources of water pollution within the village other than the objectionable discharges from the Beaver Charcoal plant. At present, work is being done to prevent this discharge.

The present type of land usage and development has not resulted in significant water pollution. However, the type of sewage treatment facility now employed must be considered as a potential source of pollution, particularly since the majority of the private sewage disposal systems have been installed without preliminary approval or final inspection. In order to negate these possibilities the advisability of the provision of a communal sewerage system is reaffirmed.


## VII RECOMMENDATIONS

1. The Beaver Charcoal Company should expedite its efforts to prevent the discharge of contaminating waste to South River.

2. The village should continue its programme of providing communal sewage treatment facilities.

/elc

Prepared by:



D. J. Currie, Technician-  
Sanitary Engineering,  
Division of Sanitary Engineering.

## EXPLANATION AND SIGNIFICANCE OF LABORATORY ANALYSES

### A Bacteriological Examination

Bacteriological examinations were performed on samples from the watercourse. The Membrane Filter technique was used to obtain a direct enumeration of coliform organisms. These organisms are normal inhabitants of the intestines of man and other warm blooded animals. They are always present in sewage and are generally minimal in other pollutants. The results of the examination are reported as M.F. Coliform count per 100 ml.

The Commission's objective for surface waters in Ontario is a coliform count of not greater than 2,400 organisms per 100 ml.

### B Chemical Analysis

The chemical analysis performed on stream and outfall samples included determinations for biochemical oxygen demand, suspended solids and in some instances turbidity.

#### (1) Biochemical Oxygen Demand (BOD)

Biochemical oxygen demand is reported in ppm and is an indication of the amount of oxygen required for stabilization of decomposable organic matter present in sewage, polluted waters or industrial wastes. The completion of the test requires five days, under the controlled incubation temperature of 20°C.

The Commission's water quality objectives are (1) for stream water - a 5-day BOD of not greater than 4 ppm. (11) for storm sewer, sewage treatment plant and industrial waste discharges

- a 5-day BOD of not greater than 15 ppm.

(2) Solids

The laboratory does tests to determine the total and suspended solids in a sample. The value for dissolved solids is determined by taking the mathematical difference between the total and suspended solids.

The concentration of suspended solids expressed in parts per million (ppm) is generally the most significant of the solids analyses in regard to stream water and outfall discharge qualities.

The OWRC's objective for discharge is a suspended solids concentration of not greater than 15 ppm.

(3) Turbidity

Turbidity is caused by the presence of suspended matter such as clay, silt, finely divided organic matter, plankton and other microscopic organisms in water or outfall discharges. It is an expression of the optical property of a sample and the results are reported in "Turbidity Units".

## ABBREVIATIONS

Estimated D.W.F.	-	Estimated Dry Wather Flow
gpm		Gallons per Minute
mgd	-	Million Gallons per Day
M.F.	-	Membrane Filter
ml	-	Millilitre
ppm	-	Parts per Million
OWRC	-	Ontario Water Resources Commission
WPCP	-	Water Pollution Control Plant
BOD	-	Biochemical Oxygen Demand

VILLAGE OF SOUTH RIVER

WATER POLLUTION SURVEY

TABLE I

<u>Sampling Point No.</u>	<u>Description</u>	<u>Date</u>	<u>5-Day BOD (ppm)</u>	<u>Total (ppm)</u>	<u>Solids</u>		<u>M.F. Coliform Count per 100 ML</u>
					<u>Susp. (ppm)</u>	<u>Diss. (ppm)</u>	
S-42.6	River at bridge upstream from Beaver Charcoal.	July 4/67 Sept. 27/67	0.6	40	1	39	12 28
S-42.4	River downstream from Beaver Charcoal outfall.	July 4/67 Sept. 27/67	1.3	40	2	38	60 70
S-41.3	River at C.N. Railroad tracks.	July 4/67 Sept. 27/67	0.7	20	5	15	1,100 210
S-41.1	River at Highway No. 11	July 4/67 Sept. 27/67	0.6	26	3	23	1,200 240

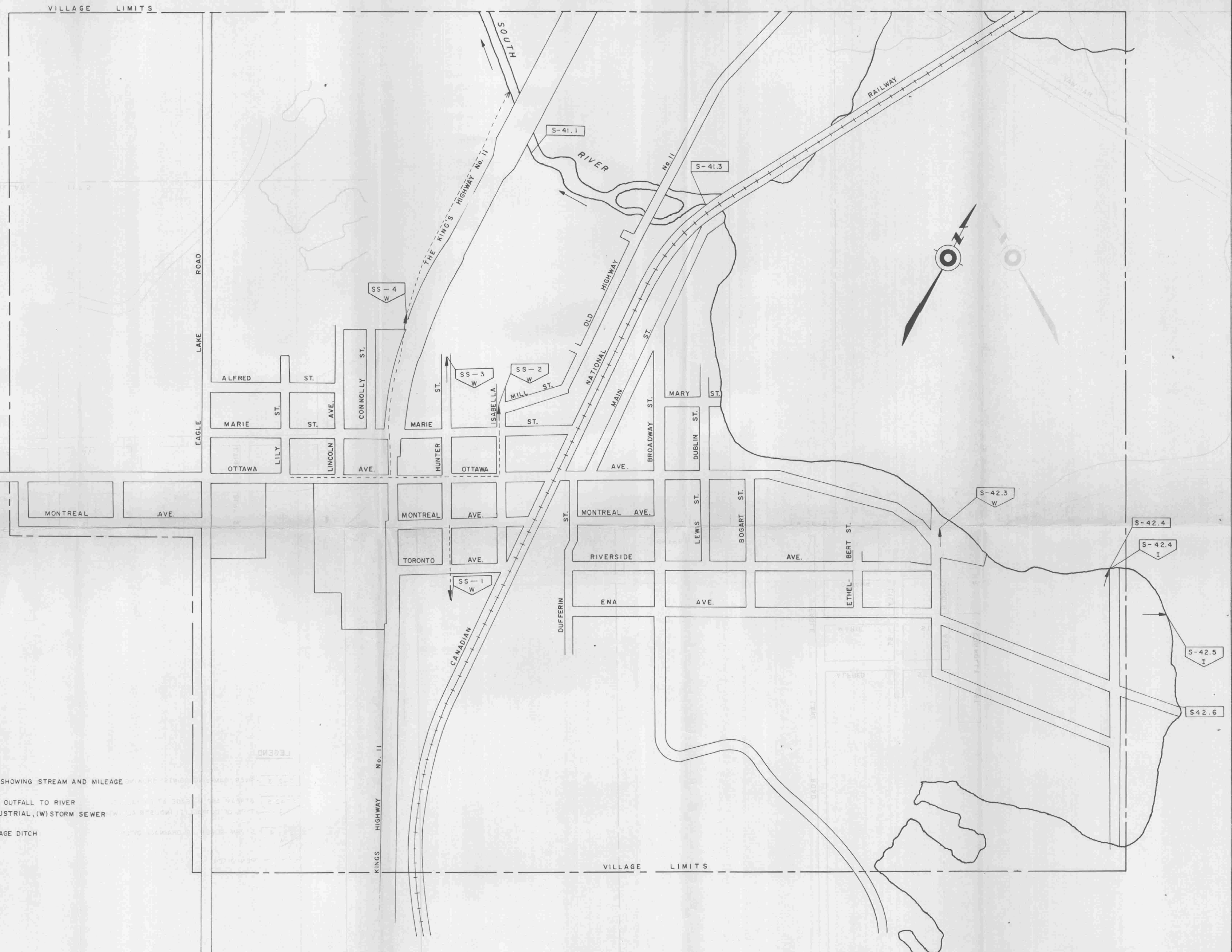
VILLAGE OF SOUTH RIVER

WATER POLLUTION SURVEY

STORM SEWERS AND DITCH OUTFALLS

TABLE II

<u>Sampling Point No.</u>	<u>Description</u>	<u>Date</u>	<u>5-Day BOD (ppm)</u>	<u>Total (ppm)</u>	<u>Solids Susp. (ppm)</u>	<u>Diss. (ppm)</u>	<u>M.F. Coliform Count per 100 ML</u>	<u>EST DWF</u>
S 42.6I	Beaver Charcoal out-fall 1 foot square wooden drain submerged.	July 4/67	submerged - see offshore sampling point results (S42.4) Table I					
S 42.5I	Beaver Charcoal out-fall 1 foot square submerged.	July 4/67	submerged - see offshore sampling point results (S42.4) Table I					
SS-1W	10-inch transite - south end of Hunter Street.	July 4/67 Sept.27/67	no flow no flow					
SS-2W	10-inch galvanized - north end of Isabella Street.	July 4/67 Sept.27/67	no flow no flow					
SS-3W	10-inch transite - north of Hunter St.	July 4/67 Sept.27/67	no flow no flow					
SS-4H	18-inch concrete - west side of No. 11 Highway -(receives overflow from spring catchment area.	July 4/67 Sept.27/67	0.5 1.3	426 334	5 4	421 330	4 8	7 gpm 9 gpm



**LEGEND**

S-42.3 - RIVER SAMPLING POINTS SHOWING STREAM AND MILEAGE

S-42.5 - STREAM AND MILEAGE AT OUTFALL TO RIVER  
: TYPE OF OUTFALL (I) INDUSTRIAL, (W) STORM SEWER

SS-4 - STORM SEWER OR DRAINAGE DITCH

--- OPEN DITCH

ONTARIO WATER RESOURCES COMMISSION

**VILLAGE OF SOUTH RIVER**  
WATER POLLUTION SURVEY  
1967

SCALE: 400 300 200 100 0 400 800

DRAWN BY: D.H. DATE: OCT. 1967

CHECKED BY: DRAWING No.: 67-79